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## DESCRIPTIONS OF NINE NEW SPECIES OF GNATS.

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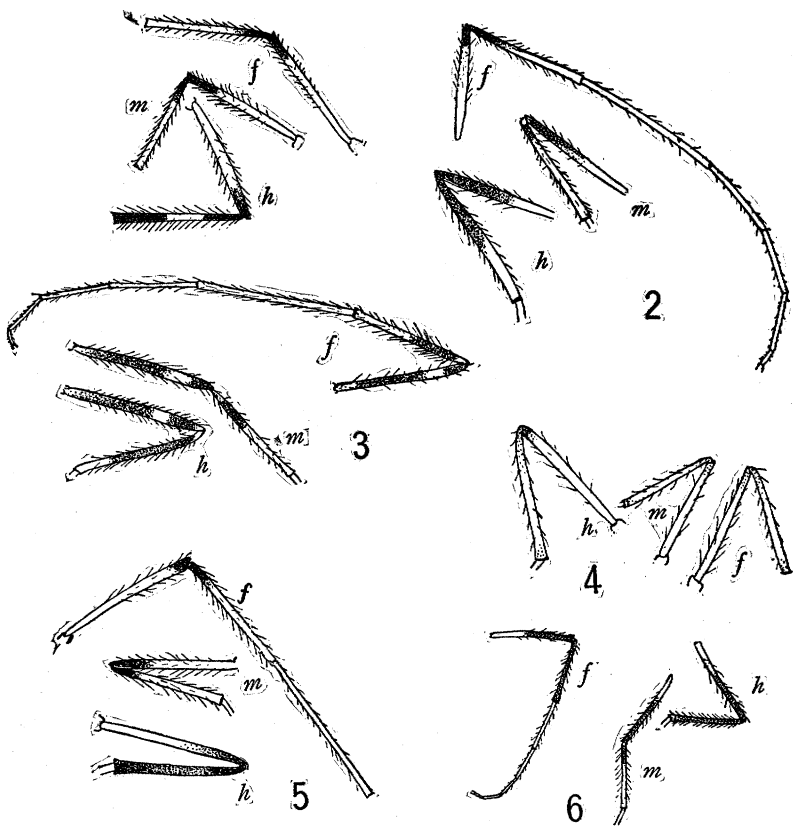
While investigating the early stages of the Chironomidæ of the District of Columbia, during the summer of 1905, the writer obtained the first five of the new forms herewith described. While comparing these with the specimens in the National Museum the last four species were discovered in the museum collection. As these species are differentiated among themselves and from the most nearly related species (*C. pulchripennis* (figs. 7, *b*; 2) and *C. tæniapennis* (figs. 7, *f*; 5)) chiefly by characters of wings and legs, it seems expedient to figure these parts, in order that the new forms may be readily recognized. The figures, except that of *tæniapennis*, are by the author from types. The types collected by the author have been given to the National Museum. I desire to thank the authorities of the U. S. National Museum for the privilege of comparing my specimens with the Museum series and of describing the new species from that series. The descriptions are published here by the sanction of the Museum authorities.

### **Chironomus nephopterus, new species.**

*Male*.—Antennal hairs gray, quite dark on distal third of antenna; antennal joints dark brown except the first which is rather light; occiput very light brown. Mesothorax cream-color; lateral vittæ red-brown and fringed with deep cream hairs, central stripe light brown; cephalic part of pleuræ almost white, rest tan-brown and white; scutellum creamy; metanotum deep chocolate brown with mesal notch of cream color at cephalic margin and extending in a hair-line down the meson; halteres white; claspers and last five abdominal segments chestnut brown, shading into black on their apical halves, apex of fourth segment tinged with faint brown, rest of abdomen green, venter of abdomen like dorsum. Coxæ white; distal third of femora chocolate brown, remainder creamy (fig. 6); tibiæ of fore and hind legs entirely dark brown, tibia of middle legs brown on proximal third shading to cream with black line at apex; tarsal joints shading from white on the first through deep cream and tan to chocolate brown on the last joint; claws black. Wing (fig. 7, *e*) clear with cinereous costal cell, tip dark for about one half the length of the lower branch of the radius, the mark being blunt wedge-shaped with its tip between the medius and the cephalic branch of the cubitus, a band crossing at the fork of the cubitus and extending half way to the base of the wing on the caudal margin. Length 3 mm. Length of wing  $2\frac{1}{4}$  mm.

One specimen. Taken at Cabin John, Md., June 3.

*Type*.—Male, Cat. No. 11022, U. S. N. M.



FIGS. 1 to 6. Comparison of leg markings: 1, *C. exquisitus*; 2, *C. pulchripennis*; 3, *C. paucipennis*; 4, *C. zonopterus*; 5, *C. taniapennis*; 6, *C. nephopterus*.

#### ***Chironomus calopecterus*, new species.**

*Female*.—Occiput brown with ashy border; antennæ light brown; mesonotum tan with ashy pruinosity; lateral vittæ brown, rather spreading; central vitta also brown, with its outer margins bordered by a narrow green line which fades to light brown; a number of long light hairs on the dorsal margins of the lateral vittæ as well as on the scutellum and metathorax; pleuræ chiefly dark brown; scutellum brown, its hinder margin gray; metanotum brown, very dark at its cephalic margin. Abdomen green in life (this is from a note at time of capture, the abdomen is now gone); halteres white; coxæ and entire legs pale cream color except the very apical margin of the middle and hind tibiæ which are black; hairs of legs pale straw color. Wing (fig. 7, a) hyaline and crossed by a cinereous band in width a little less than half

the length of the caudal branch of the radius, its hind margin at the small cross vein and extending slightly proximad after crossing the medius; veins dark where crossed by band, radius continuing rather dark to the margin; whole of costa light brown. Length (without abdomen)  $1\frac{1}{2}$  mm. Wing length  $2\frac{1}{4}$  mm.

One specimen. Taken at Cabin John, Md., June 3.

*Type*.—Cat. No. 11021, U. S. N. M.

***Chironomus hirtipes*, new species.**

*Male*.—Antennal joints and hairs smoky, except the first two segments which are tan; vertex and mouth parts tan. Mesothorax rather dark tan, with slight pruinosity, the lateral vittæ light brown, the central rather pruinose continuing in a brown line to the scutellum, a black line running along its lateral margins from the cephalic margin of the mesonotum to the scutellum and spreading in the middle of its length into a distinct triangular dot; scutellum dark brown, with black spots at its lateral margins; metathorax dark tan, with faint black spots on its cephalic margin; pleuræ and coxæ tan-brown. Wings uniformly smoky except at the very base, which is white. Abdomen deep cream or pale tan, lateral brown dots on the first segment, brown basal bands on succeeding segments until the last two are entirely dark brown and tan. Venter tan. Femora and tibiæ (fig. 12) tan with thick covering of dark brown, long hairs, which give a decidedly fuzzy appearance, last two tarsal joints light tan, rest cream. Length 5 mm. Wing length 4 mm.

Three specimens. Taken at Cabin John, Md., June 3.

*Type*.—Male, Cat. No. 11024, U. S. N. M.

*Female*.—Vertex of head light tan, antennæ same; mesothorax tan, lighter than in male, with more pruinosity as are also the vittæ; the line on each side of the central vitta brown; pleuræ dark brown, with slight pruinosity and light brown mottlings; scutellum dark tan; metanotum tan shading into two chocolate brown dots on its cephalic margin; wings with slightly more white at base than in male; halteres straw color; abdomen ashy, with creamy hairs, on second and all succeeding segments a basal band of chocolate brown which narrows until it practically disappears on the last, venter very dark brown; coxæ tan; femora and tibiæ tan, with rather thickly set brown hairs but not nearly so fuzzy in appearance as those of the male; first three joints of tarsi creamy, rest pale tan. Length 3.5 mm. Wing length 3.5 mm.

Three females taken with the males at Cabin John. Specimens have also been taken at Ft. Porter, N. Y., on July 3.

*Cotype*.—Female, Cat. No. 11024, U. S. N. M.

The insects when resting, as is their habit, on the under side of leaves, much resemble little spiders and would scarcely be noticed by one looking for gnats. They are rather more stupid and easy to capture than the average. Although not found in swarms they were locally quite abundant. The females taken at Cabin John laid eggs June 4, about 700 being embedded in a round mass of gelatin. The eggs hatched June 7, but the young larvæ all died.

**Chironomus pœcilopterus, new species.**

*Male*. — Vertex of head tan color, antennal hairs silvery gray darkening toward the tips of the antennæ, joints almost black except the first, which is tan; mesothorax deep cream (pale green in life), with silvery pruinosity; median vitta tan, its caudal end bearing two small brown dots; lateral vittæ tan which color extends also over the caudal half of the pleuræ, the cephalic parts of which are creamy; scutellum creamy; metanotum tan, with two dark brown, almost black stripes approaching posteriorly; wings (fig. 7, c) bare, hyaline, with costal area cinereous, an irregular cinereous band crossing the wing at the small cross vein and cubitus fork, occupying about one half of the length of the lower branch of the radius and extending irregularly basad along the caudal margin to the tip of the anal vein. A small, cinereous, somewhat wedge-

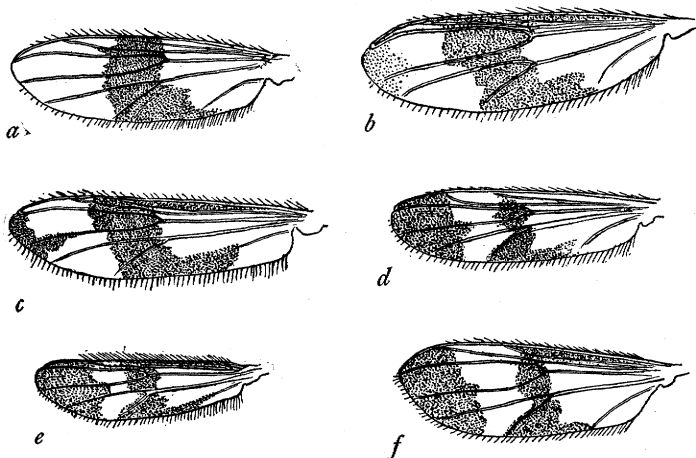


FIG. 7. Comparison of wing markings (not to exact scale): a, *C. calopterus*; b, *C. pulchripennis*; c, *C. pœcilopterus*; d, *C. zonopterus*; e, *C. nephopterus*; f, *C. taniapennis*.

shaped spot at tip of wing. Abdomen covered with long light-colored hairs, first four segments Nile green in life (fades to cream in death), caudal third of fifth segment and the whole of the succeeding segments and claspers mottled light and dark brown. Legs (fig. 3) fringed with long fine hairs corresponding in color to the parts on which they are; coxæ creamy, also the very bases of the femora, rest of femora dark brown, with creamy band occupying about the middle of the distal halves; proximal half of tibia in middle and fore legs dark brown, except the very base which, with the distal half, is creamy, a dark spot at juncture with tarsi, in hind legs the proximal two thirds of the tibia is dark; tarsi creamy white, claws black. Length 4.5 mm. Length of wing 3.5 mm.

*Type*. — Male, Cat. No. 11023, U. S. N. M.

*Female*. — Head and antennæ light tan, thorax as in male, with markings less pronounced and the creamy part having a decided greenish tinge. The median vitta,

which is prolonged as a brown line to the scutellum, is divided by a creamy line on its cephalic half. Pleuræ entirely brown; caudal part of scutellum brown; metanotum much darker than in male. Abdomen with long silvery hairs, first three segments pea green, with dark, indefinite, mesal marking becoming quite pronounced on the fourth, spreading into a basal band, slight on the fifth, which segments are silvery pruinose on sides, apical third of segments three to five greenish white, basal half of the seventh and eighth segments black and their apical halves greenish white. These dark markings are very variable and may be confined to the last two or three segments. Femora as in male, the band very pronounced, proximal half of first, third of second and two thirds of third tibiae (except for a light spot just distad of knee) dark brown, the rest creamy, the articulation with the tarsi black as also the articulations of the tarsi and claws. Hairs not so long as on the legs of the male. Entire venter of the abdomen dark instead of corresponding with the dorsal markings as in the male. Length 4.5 mm. Wing length 4 mm.

*Cotype*. — Female, Cat. No. 11023, U. S. N. M.

There were six males and two females taken at Cabin John, Md., June 6. Both females laid eggs the tenth. They were about 200 in number and arranged irregularly in a rounded mass of gelatin about 3.5 mm. in diameter (fig. 8). The outer coat of the gelatin has a peculiar appearance under the microscope, as if of myriads of short lines directed toward the center of the mass. The larvæ were hatched June 11, and the last died July 29. They make houses on the bottom of the jar from grains of sand and bits of *Spirogyra*, using rather large bits of sand.

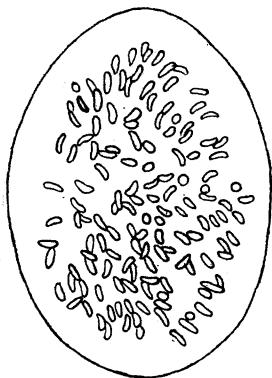


FIG. 8. Egg mass of *C. pacilopterus*.

#### ***Chironomus exquisitus*, new species.**

*Male*. — Antennal joints dark, except first, which is tan colored; hairs of antennæ cream colored on proximal three fourths of antennæ and cinereous on distal fourth; occiput creamy. Mesonotum practically white (probably green in life) the vittæ brown, bordered by golden brown, the anterior ones distinctly divided into two; pleuræ pale brown; scutellum white; metanotum black divided by white line at meson. Last four abdominal segments and claspers black with faint tan mottlings, fifth segment black on distal, yellow on proximal, half; rest of abdomen Nile green; the whole covered with long, straw-colored hairs. Wings (fig. 9, c) hyaline, the costal cell clear, tip cinereous, this color extending over a little less than the distal fourth of the wing, a narrow cinereous band at cross vein extending from R to caudal margin and along the latter about as far as the anal vein. Legs (fig. 1); coxæ greenish white; femora white except for black band occupying about the distal fourth (a little more on the last two pairs than on the first), about the proximal fourth of the

fore and middle tibiae black; the extreme apex of middle tibiae black; middle third of hind tibiae white, the remainder black or very dark brown; tarsi of fore legs green, those of other legs white; the legs with rather long hairs corresponding in color to the parts on which they are. Length 4.5 mm. Wing length 3 mm.

Taken at Cabin John, Md., June 10.

Type. — Cat. No. 11141 U. S. N. M.

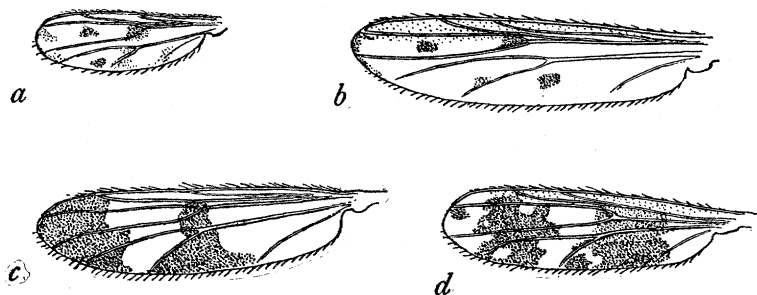


FIG. 9. Wing markings (not to exact scale): a, *C. labeculosus*; b, *C. nœvus*; c, *C. exquisitus*; d, *C. perpulcher*.

#### **Chironomus zonopterus, new species.**

*Male*. — Antennal joints brown except the first which is tan color, hairs dirty yellow; palpi brown; occiput light yellow; mesothorax light yellow with three deep tan brown vittæ; scutellum yellow; metanotum tan (quite dark in one case); pleuræ yellow as also the first five segments of the abdomen (these yellow parts, by traces of color on one of the specimens, are doubtlessly green in life), last four segments and claspers much mottled with black. Wings (fig. 7, d) hyaline with two smoky bands, one at the tip quite wide, irregular, distinct, occupying most of the distal part of the wing, the other at the cross vein and fork of cubitus narrow, very irregular, somewhat more indistinct than the other band and extending along the caudal margin almost to the anal vein, costal cell hyaline. Legs (fig. 4) pale yellow except for brown claws and faint brown tintings at knees, both on femora and tibiae especially noticeable on hind pair, apices of tibiae, especially hind pair, also tinted faintly brown, their very apical margins black. Length 4.5 mm. Wing length 3.5 mm.

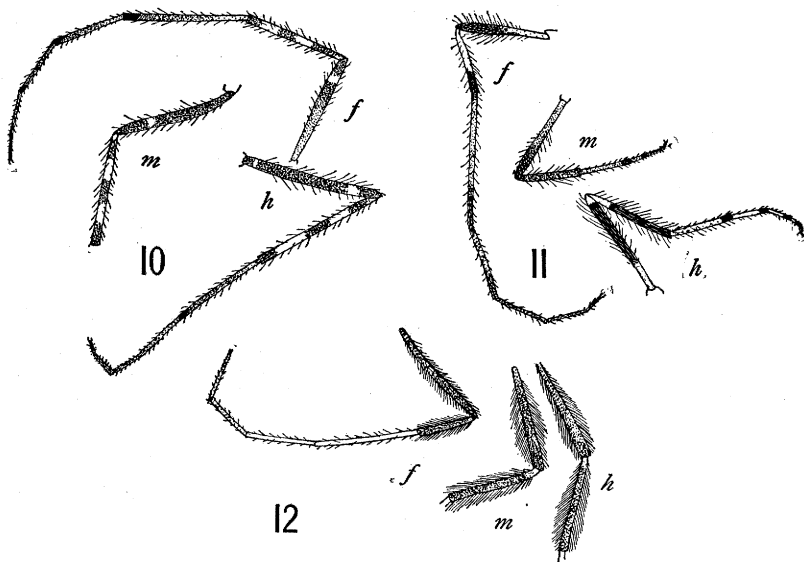
Two specimens, the type from Clementon, N. J.

Type. — Male, Cat. No. 11025, U. S. N. M.

This species appears to differ from the extremely closely related *C. fascipennis* Zetterstedt in that the band at the tip of the wing is very broad rather than moderate, the middle differs in width and general outline from that of *C. flexilis* Linné (which the band in *fascipennis* is said by Zetterstedt to resemble), by lacking a dark spot at the base of the wing, and by possessing darker metanotum, knees and terminal portion of abdomen.

**Chironomus perpulcher, new species.**

*Male*. — Antennæ, both joints and hairs, black, with brownish reflections; head black. Mesonotum polished, the wide, golden brown vittæ separated by very indistinct, light lines; rest of body chocolate brown or black except claspers, which are mostly white. Wings hyaline, the tips clear, two chestnut brown bands completely crossing wing, the distal one mottled with clear spots and occupying the middle part of the space between tip and cross vein, the proximal band extending in width from cross vein about half way to base of wing (fig. 9, *d*). Legs (fig. 11), coxæ black at bases, white distally; fore femora yellowish white on proximal, black on distal half; middle femora light brown on proximal two thirds, chocolate brown to black on



FIGS. 10 TO 12. Comparison of leg markings: 10, *C. nævus*; 11, *C. perpulcher*; 12, *C. hirtipes*.

distal third; hind femora black on distal three fourths except for snow white tip, remainder creamy; fore tibiæ snowy on proximal two thirds, distal third black; middle tibiæ deep chestnut brown; hind tibiæ snow white for about the basal fourth; remainder black; front tarsi with first joint chocolate brown at very base, also for about distal fourth, remainder pale brown, second joint about the same, other joints chocolate brown to black at claws; middle tarsi, first three joints yellowish brown with black on the distal fourth, third and half respectively, last two joints black; hind tarsi, first four joints yellowish white with black on distal fifth, fourth, third and half; last joint light brown. Length 4.5 mm. Wing length 2.5 mm.

*Female*. — Practically the same as the male.

Taken at Plummer's Island, Md., August 11, by Dr. A. K. Fisher.

*Type*. — Male, Cat. No. 11142, U. S. N. M.



**Chironomus labeculosus, new species.**

*Female*. — Antennæ, head and entire body chocolate brown. Legs clothed with light yellowish hairs; pale brown, the proximal parts of the femora somewhat more darkly shaded. Wings (fig. 9, *a*) hyaline, with no distinct banding, a cinereous spot in the middle of cell  $R^5$ , a larger one at the cross vein, one on caudal margin in center of cell  $C^1$ , an indistinct mark at the base of this cell, another on the anal vein, tip of wing with faint mark. Length 1.5 mm. Wing length 1.75 mm.

Taken at Hot Springs, Arizona, June 27, by Mr. H. S. Barber.

*Type*. — Female, Cat. No. 11144, U. S. N. M.

**Chironomus nævus, new species.**

*Male*. — Head wanting. Mesothorax brownish black, the vittæ dark gray, scutellum chestnut brown; metanotum chocolate brown; pleuræ dark brown. Wings (fig. 9, *b*) clear, with four cinereous dots, one in the middle of cell  $R^5$ , one at the cross vein, a spot in cell  $C^2$  and a very indefinite spot in cell  $C^1$  close against vein  $C^2$ , there is a faint band on the tip of the wing in cells  $R^5$  and  $M^3$  and the costal margin as well as the upper third of cell  $R^5$  has a very slightly smoky appearance. First five abdominal segments chestnut, with scattered black scales, segments two to five with a median black stripe, the last segments dark gray with brownish reflections and scattered black scales, the first six segments with an apical white band in width one fourth (or slightly less) the length of the segment; claspers brown and black. Legs (fig. 10), coxæ dark brown; femora dark brown, lighter on proximal half of the fore femora, with a narrow white band at base of apical third in the middle pair and fifth in the other two pairs, and, in the hind pair, a very small, yellowish white band at base; white knee spots; tibiæ dark brown with two white bands occupying about the second and the fourth fifths from the base; first joint of front tarsi creamy on basal fifth shading through brown to black at distal end, second joint creamy at extreme base shading also to black, third and fourth joints brown shading to black, fifth black; tarsi of middle pair gone; first joint of hind tarsi black at extreme base followed by a narrow creamy band and then shading through brown to black at tip, other joints shading from brown on the second to black on the last. Length 6.5 mm. Wing length 4.5 mm.

Taken at Beulah, N. M., in August, at an altitude of 8,000 feet, by T. D. A. Cockerell.

*Type*. — Male, Cat. No. 11143, U. S. N. M.